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ADDRESS ALL COMMUNICATONS TO

THE EXCAVATING ENGINEER PUBLISHING COMPANY

BRADLEE VAN BRUNT, Manager and Editor

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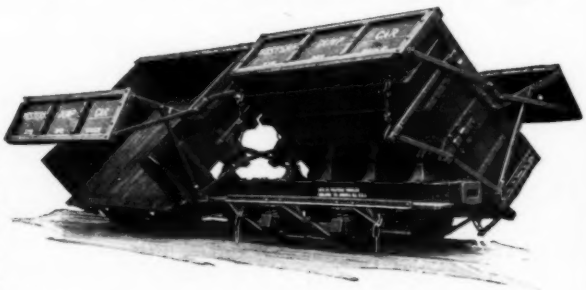

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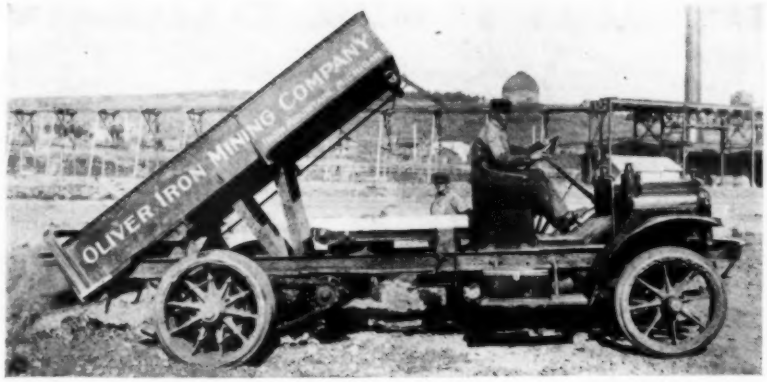

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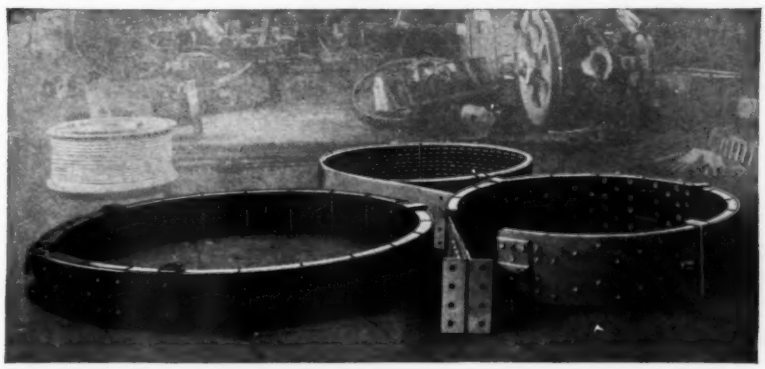

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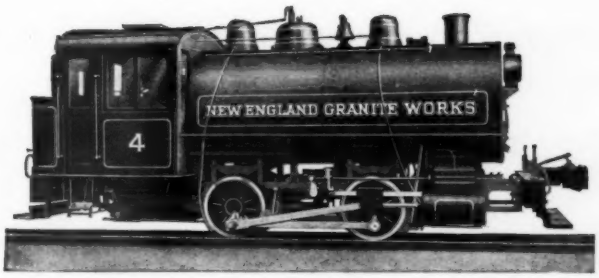

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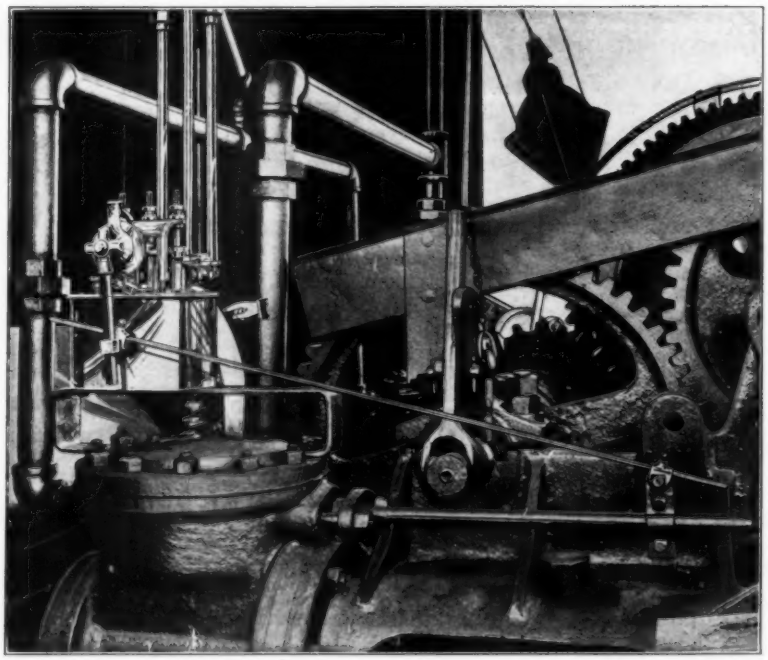

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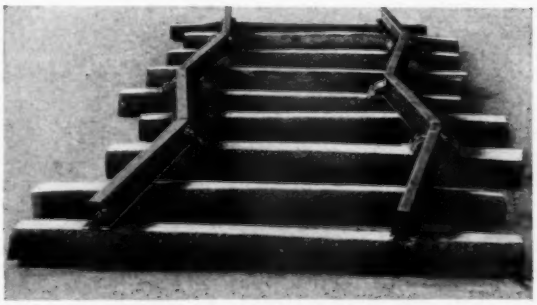

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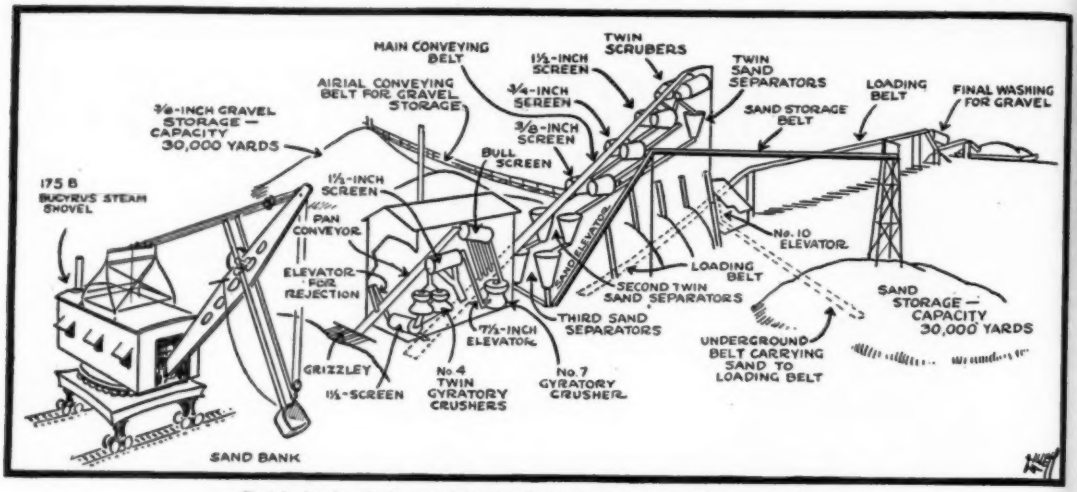

Sketch showing the layout of the John B. Rose Sand & Gravel Company's plant

A general view of the John B. Rose Sand & Gravel Company's plant on the Hudson River near Marlboro, New York, showing the 175-B Bucyrus revolving shovel in the foreground. By referring to our sketch it will be possible to get a general idea of the design of the plant itself. It will be seen that the material can be loaded either directly into barges in the river or on to railroad cars.

The Excavating Engineer

Vol. 13 DECEMBER, 1916 No. 3

Modern Gravel Excavation

By An Observer

The second installation on record of a big revolving shovel in a gravel plant. Why the John B. Rose Co. decided to adopt this method of operation.

AN excavating unit that will put sand and gravel to your screening and crushing plant at the rate of five hundred cubic yards per hour sounds like a big story doesn't it? But its true and I can prove it. John B. Rose, the president of the John B. Rose Sand & Gravel Company was himself very skeptical until he was shown, and to-day if any reader of this article will take the time to visit the plant of the above company at Marlboro, New York, on the west bank of the Hudson River sixteen miles above Newburgh, they too can be convinced of the truthfulness of this statement.

The Digging Problem and How Solved

For several years the Rose Company have been operating this bank and each year experiencing a steadily increasing demand for their product of sand and gravel. The washing and screening plant has been enlarged several times until it has reached its present capacity of about three thousand cubic yards daily.

This part of the enlargement only necessitated adding larger screening and crushing equipment, but the problem of excavating the material from the bank and carrying it to the plant was unsolved up to January 1916. Previous to that date various methods had been employed, one of them a cable excavator that proved itself incapable of excavating from the high bank, the face of which is about one hundred and thirty-feet high. Standard type shovels were later employed but with no great success owing to the compactness of the gravel which left about seventy-five percent of the bank overhanging. Frequently the shovel with its twenty-foot digging height was buried beneath tons of gravel, unless the bank was drilled and blasted ahead of the operations. This naturally added very materially to the excavating cost. This together with the expense of transporting the gravel from the shovel to the screening plant made an almost prohibitive cost. Moreover it was not infrequent that laborers employed to trim the slope ahead of the shovel, were caught in the slide of the overhanging gravel and in many cases were killed. These conditions demanded an excavating unit of large radius of action and greatest possible digging height.

The Installation and Operation of the Shovel

The result of the company's investigations was the installation of a Bucyrus 175-B revolving shovel. This machine equipped with a 3½ yard dipper is of the full revolving type mounted on four four-wheeled equalizing trucks. Its main or hoisting engines are 12-inch bore with a stroke of 15 inches which gives a bale pull of 60,000 pounds. The boom length which is 75 feet and the dipper handle 48 feet gives the machine a digging radius of about 90 feet, which allows it to take a 60-foot depth cut, the front end of the machine being far enough from the bank to allow for the sliding of the overhanging gravel without fear of injury. The dumping height is 52 feet when the dipper door is open and the dumping radius is 85 feet. The gravel is dumped in a large hopper through grizzlies with openings large enough to admit only stones that will go into the crusher. The shovel in its present operation is loading swinging and dumping on an average of once in twenty-six seconds.

It will be seen that the wide working range of the shovel not only reduces greatly the number of laborers required in the pit, but dispenses with the necessity of rehandling the material, which in itself is a costly operation, by dumping directly on the belt, through a grizzly as mentioned. This belt, furthermore, would only be extended at intervals of several months, as the excavation progresses.

UMI

It took a brave man to eat the first oyster and it took a braver man to install his first big shovel in a gravel bank. But like the oyster fellow, he has found it to be all and more than he expected of it.

If this article should attract the attention of gravel producers, let me prevail upon him to make a quiet little pilgrimage to Marlboro, just take a good look at the compactness of the bank, then put your watch on the big fellow and you will leave, having been thoroughly convinced that this company has solved the gravel excavation problem, and that you have surely beheld the last word in steam shovel construction. Geo. C. Hudson is superintendent of the plant.

175-B Bucyrus revolving shovel in operation. A load is just being dumped into the hopper, a corner of which can just be distinguished on the right of the photograph. This view gives an excellent idea of how perpendicular the bank stands and how the material breaks off. Boulders too large to go through the grizzly are thrown to one side and mudcapped. This view also gives a graphic idea of the immense reach of this machine.

Newt. Wilcoxon with Clapp, Norstrom & Riley's St. Paul Office

Owing to the heavy increase of business in the Chicago office of Clapp, Norstrom & Riley, Mr. Norstrom of the firm has engaged Mr. Newt. Wilcoxon to manage the St. Paul office, and he will move to the Chicago office. Mr. Wilcoxon is one of the oldest equipment men in the business and has had perhaps more experience in the use and manufacture of contractors' equipment than any other man in the business—and enjoys an extensive personal acquaintance among all the contractors throughout the United States and Canada. He managed the Chicago office of the Kilbourn and Jacobs Mfg. Co. for fifteen years and was later vice-president and sales manager for the Oliver Co. at Knoxville. He was for five years president and manager of the Wilcoxon Construction Company who used Bucyrus draglines and shovels, Western dump cars, scrapers and graders, and Davenport locomotives.

Some Reminiscences of Early Shovel Days and Shovel Runners

By B. St. John, Canadian Equipment Co., Montreal

When George Williams, Henry Lutz, Bill Rollo, Ed. and Red Bodette, Jim Hernly, Frank Barr, George Stanbury and others were bad boys.

Being in a reminiscent mood, George Williams' name appearing in the current issue of the *Excavating Engineer*, started me thinking of the days when he and other old timers, such as Henry Lutz, Bill Rollo, Ed. and Red Bodette, Jim Hernly, Frank Barr and George Stanbury were running shovels on the Lake Shore and Michigan Southern Railway between Chicago and Buffalo. Steam shovel work in those days was not taken as seriously as it is today, and these shovel men found time to play some practical jokes on each other, and anyone else unfortunate enough to come in contact with them.

I wonder if George Williams ever thinks of the time that he loosened the chain from an Italian's dancing bear, allowing it to escape to the woods, and the bear hunt that followed, which would have been a man hunt had the Italian been able to get near enough to George to use his stiletto; or of the time that he, "Hank" Lutz and Bill Rollo attempted to put the patent medicine pedlar's wagon on top of the barn owned by a Swede with whom they were boarding. Hank and George were pulling on the wagon and Bill Rollo was behind pushing on the box. The rear spring opened up and Bill thoughlessly put his head through it, when they had the wagon partly up the Swede and the pedlar came out of the house and started for the barn to feed the horse. Hank and George let go, Bill lost his footing, the spring closed down on his neck, and he and the wagon landed in a heap on the ground. As Hank and George disappeared, the Swede and the pedlar had to extricate Bill, who had some job explaining to them just what he was doing in that position.

At another time, when Jim McGillivary was craning for George he found the body of a ground hog on the track, where a train had cut it in two. He threw one half of it at a pitman and then disappeared The pitman waited until a train came in and Jim was forced to get upon the shovel to work, and watching his opportunity when George swung the boom over the car, which would bring Jim directly in front of him, the pitman threw the piece of ground hog, missing Jim and hitting George in the face. It is needless for me to say that operations ceased and all hands disappeared until George cooled off and cleaned up.

Another story I have heard is of George Williams, Red Bodette and Hank Lutz, when boarding at the Swede's house, mentioned above. The Swede was a chronic ailer and was continuously trying some new patent medicine. George or Red had purchased a bottle of pain-killer and had recommended it to the Swede. After he had taken a dose or two and claimed that he felt worse instead of better, Red removed the skull and crossbones from a bottle of carbolic acid and pasted it on one side of the pain-killer bottle. He than asked the Swede if this was the bottle he had taken a drink from. The poor Swede almost dropped dead, but George and Red advised him to drink all the milk he could hold, which was the only cure. He drank all the milk in the house and had his wife milk the cow at midnight for a fresh supply.

Ed. Bodette was running the old 45-ton Bucyrus No. 85 at Elyria, Ohio, and as all of the freight trains going west passed his shovel at slow speed, on account of a temporary track, he had been able to secure a fine lot of tools from the boxes which always accompanied shipments of farm machinery, etc., and which were usually nailed on to the flat cars on which the machinery was being shipped. George Williams and my brother Ed. St. John, were operating a shovel at Toledo, Ohio. They heard of the fine lot of tools Ed. Bodette had on his shovel, and rode a freight down to Elyria Jct., arriving there in the night. They figured that the watchman would be in Elyria and figured rightly. They filled their carpet bags from Ed's stock and returned to Toledo via the same route. While Ed. had his suspicions, he did not dare say anything on account of the manner in which he had secured the tools.

George Williams and Henry Lutz were operating a shovel near Amherst, Ohio, and boarded with a Mrs. Clement at Cliffs Quarry. The owner of the quarry lived in Cleveland, but kept a safe in Clement's barn for papers which he did not want to carry back and forth. He forgot the combination, and one Sunday morning he was in the barn and had been working for a long time on the lock without results, when George and Hank entered on the scene. George told the owner of the safe that he could open it, as he used to be a safe robber before he went to steam shovelling. Although he had no more knowledge of the combination than the man in the moon, he gave the handle a few turns backwards and forwards and lo and behold the door opened. George was as much surprised as the safe owner, and you can take it from me that George's reputation in the small community was not to be envied. I may add that the quarry owner removed all his valuables from the safe to Cleveland for safekeeping.

I wonder if George remembers the time that Mrs. Clement's dog got fast in the hot air register. Ask him to tell you of this, or of the time he and Hank Lutz watched one of the pitmen, who had a bottle hidden in the quarry, and how they discovered its hiding place and the result. Ask him about this also.

If any of the old timers mentioned above care to write me I wound be very glad indeed to hear from them and would surely reply.

(Or if anyone has anything on Burt it might be safer to pass it to the Editor!

Figs. 1 and 2. The first operation Preparing to widen and deepen an old open cut by removing an old spoil pile alongside this cut.

Fig. 3. Looking from upper end of completed well or sump used for catching and storing water for use in concentrating mill. Pumping plant in background. Sump about 2000 feet long, 100 feet wide on top, 30 feet deep with 1 to 1 slopes.

Electric Dragline Operation, Ray-Consolidated Copper Company, Hayden, Arizona. Excavation of Sump.

Developing the Ray-Consolidated Copper Company's Property with an Electric Dragline Excavator

A description of the operation of an electrically operated dragline excavator mounted on caterpillars at Hayden, Arizona.

THE Ray-Consolidated Copper Company have for the past year been carrying on extensive developments on their property at Hayden, Arizona, in connection with which they have been using a small electrically operated dragline excavator mounted on caterpillars. The dragline operation is interesting as it has replaced the team method in a very satisfactory manner.

The work which has been done is in short, the building, enlarging and cleaning out of an open-cut canal or sump at the pumping plant, the repairing of old dikes, and the building of a new levee or dike across a gap in the Gila River Valley which had previously been washed out by floods.

Description of Dragline Excavator

The dragline excavator which was purchased for the purpose, was a class-7 Bucyrus machine equipped with a one-yard bucket and a 40-foot boom. As stated, it is operated by electricity and mounted on caterpillar traction. The motors are designed for 3 phase, 60 cycle, 440 volt, the main hoisting motor being a variable speed intermittant duty type 50 H. P. The dragline, as shown in Fig. No. 5, is equipped with a hand-operated cable reel designed for 500 lineal feet of power cable. This facilitates the handling of the cable, as the machine is moved back and forth on the work.

Cleaning out the Slump

The first work that the dragline did was to clean out and enlarge the old open-cut which is mentioned above. This sump is used for storing and collecting water which is pumped up to a reservoir for use in the concentrating mill by a pumping plant. This pumping plant may be seen in Fig. No. 3 which photograph was taken from the upper end of the sump. Figures 1 and 2 show the machine in operation on this work. Its first work was to remove an old spoil pile alongside the old open-cut which had been made by a revolving crane equipped with a clam-shell bucket. This was done in preparation for widening this waterway The sump is about 2000 feet long, about 100 feet wide on the top and 30 feet deep with slopes of about 1 to 1. The material was mostly sand, gravel and tailings which were very soft and made rather treacherous ground to operate on. It was necessary therefore, to stand 6 feet from the edge of the bank in order to operate in safety. This made the distance from the toe of the slope about 41 feet and it was necessary to dig beyond that. This job, however, was done with little difficulty.

Fig. 5. This shows the hand-operated cable reel designed for 500 lineal feet of cable.

Fig. 4. This is an average bucket load.

Building the Dike

The dike is being built in order to impound the slimes, and as stated above, it is being built across a gap which the Gila River had previously cleaned out. The above mentioned slimes are brought down hydraulically from the mill.

It is interesting to note here a fact which we have been told, that these tailings or slimes contain about $3.00 worth of copper per ton which cannot be recovered profitably by any process known at present. There are approximately 10,000,000 tons spread out over an area of about 1200 acres.

The Figures 4, 5, 6, 7, 8 and 9 give a very good

Fig. 6. Building the dike. Note throw of bucket. This machine with a 40-foot boom was working at times with a total reach of 118 feet.

Fig. 7. It was necessary to build part of its own roadway. The material was taken from both sides.

Fig. 8. Looking Back over the Completed Work

Fig. 9. Building the Dike as it Backs Away

Dike Construction with a Class-7 Bucyrus Dragline Excavator Mounted on Caterpillars, Ray-Consolidated Copper Company

idea of the method of operation, in fact a good deal clearer one than can be given in words. The size of the dike is such that it is necessary for the operator to throw the bucket out on both sides of the levee in order to get sufficient material. At times this machine was working with a total reach of about 118 feet which is a splendid performance for a dragline with a 40-foot boom.

The output of course has varied considerably, but at times it is a safe estimate that the machine was making a thousand yards a day in about 7 hours work. Its average operating speed under these conditions was about two buckets a minute. During the month of June the dragline excavator placed 19,745 cubic yards of material in 1250 feet of dike using 6100 K. W. H. of electric current which is produced there at a cost of about 1 cent per K. W. H., making the total power cost only about $61.00 for the full month. The machine was operating 29 days, an average of about 7 hours per day. It is important to note, however, that the yardage given does not include a great deal of material which it has been necessary to cast away and waste, because of the fact that it was too soft to use in the dike. At times the percentage ran up to nearly 50% of the material removed during the day. The yardage is practically double that obtained by the old team method and the cost is considerably lower.

Part of the work as may be seen in our photographs, was the rebuilding and enlarging of some of the dikes which necessitated one caterpillar being on old firm ground and the other one on new and soft ground, which had to be built by the machine ahead of itself. While this lasted, this of course presented an unfavorable condition for good records.

Mr. W. H. Hauser who has been operating the dragline and to whom we are indebted for much of the above information tells us that the caterpillar traction has been working very satisfactorly. He says furthermore that the machine works so easily that there is very little for his assistant to do other than to bring him in ice water once in a while!

L. S. Cates is general manager, D. D. Moffat, superintendent of mills and E. J. Franklin, consulting mechanical engineer. D. C. Jackling is vice-president and managing director. The dragline has been operated for the greater part of the time, as stated, by W. H. Hauser.

When the Four Spot Jumps the Track

By Charles Nicholls Webb

Cap Morton's the boss of the Monitor Pit—
As quiet a soul as you ever did see;
A cyclone, I'll bet, wouldn't fuss him a bit;
An earthquake would probably move him to glee;
But down in the pit when the work's runnin' slack,
The shovel's in rock, and the goin' is bad,
The Four Spot goes dippy and jumps off the track,
Then—then is the time when Cap Morton gets mad.
He cusses the Four Spot for all he is worth
And then takes a turn at the boys of the crew,
And when he has cussed them clean offen the earth,
He goes at the track gang and cleans it up, too;
Meanwhile, we ain't sent for a bar or a jack;
Though the work's standin' still, ain't none of us sad;
It's great when the Four Spot jumps offen the track,
And holds up the mine while Cap Morton gets mad
There's times when it just takes a look from old Cap
To make the men buckle right into the work;
But on this occasion, we don't give a rap;
The longer he jaws us, the longer we shirk;
The new hands, for fear that he'll give them the sack,
Get busy for fair, and I don't need to add,
They soon get the Four Spot back onto the track;
But, next time, they loaf while Cap Morton gets mad.
Cap Morton's a prince; he is honest and fair;
He knows how to mine and he treats his men right,
And those guys who say that he ain't on the square,
Needn't look very far to pick up a fight;
If he needs our help we are right at his back;
Just let me tell you we're for him, ev'ry lad;
But when the old Four Spot jumps offen the track,
It sure is amusin' to see Cap get mad.

He Was Too Smart

"How many pears have I on my plate, pa?" asked a smart boy the other evening.

"Two, my son," answered the fond parent, surveying the fruit.

"No, sir; I've four and I can prove it," triumphantly remarked the juvenile.

"How do you make that out?" asked the perplexed father.

"Well, sir, haven't I two pears, and don't two pairs make four?" grinned the urchin.

"All right, my son. You have too many," said the old man, getting up and reaching over. "Here, mother, you take one and I'll take one, and John may have the two that are left."—*Exchange*

Immaterial

"Scientists are now generally agreed that drunknness is a disease, and that the man who drinks should be treated by a physician."

"Oh, well, most men who drink don't care who treats them."
—*Tit-Bits.*

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Address all communications to the company.

THE EXCAVATING ENGINEER PUBLISHING CO.

Bradlee Van Brunt, Manager and Editor

267 National Avenue Milwaukee, Wis., U. S. A.

Construction Outlook

The most striking feature of the present construction outlook is the great amount of money available for flood prevention and river control projects, such as the Miami Conservancy District and the Mississippi River levee projects. This is greater than it has ever been before and presents a splendid field for contractors.

As everyone knows, there is very little doing in the railroad construction field and even drainage work seems to be rather dull, although there are prospects of a considerable amount of the latter work as the season progresses. Municipal and road construction work on the other hand shows great promise and the amount of money to be authorized the coming season for road work in particular will probably be larger than it has ever been before. It is striking, in glancing through the reports of contracts let, to see how many contractors who heretofore have specialized in railroad work and heavy construction are undertaking road and street contracts. Several familiar names may be noted in this issue.

One condition, however, of vital importance to the contractor is becoming more and more apparent every day. We speak of the situation among manufacturers of contractors' equipment. Not only are deliveries getting longer every day, but prices are constantly climbing. The demand for equipment is improving steadily and even now it is difficult to get delivery of a standard machine by spring 1917. Furthermore, the rapid rise of prices of raw materials absolutely necessitates a corresponding raise in equipment prices. These prices will continue to climb and it is evident that deliveries will in turn get longer. Contractors would be wise to anticipate their requirements as far as it is possible to do, not only to be protected against a greater future rise in prices but to assure their having the tools to work with when their harvest time comes.

Progress in Uniform Boiler Laws

The Industrial Commission of Ohio has called a meeting at Washington, D. C. of representatives of the various states in the interests of uniform boiler legislation. According to information at hand at present, this meeting will be attended by representatives of many states, among which are Louisiana, Texas, Illinois, Pennsylvania and the cities of Little Rock, St. Louis, Chicago and Detroit.

It is expected that arrangements will be made whereby speakers of national reputation will take part in this meeting and urge the advisability of having all states adopt the same standard in the interest of uniformity and urging the necessity for legislation in this connection as a safety measure and as promoting efficiency and the best possible service.

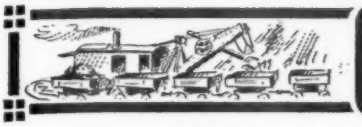
We have also received information that the city of Philadelphia, which is permitted to have by law a set of boiler rules differing from those in force in the state, has drafted a new ordinance pertaining to boilers which provides for the adoption of the ASME Code by that city. This means that the new code will replace what are believed to be the oldest boiler rules enacted in the United States—the Philadelphia rules having been in existence since 1868.

As the majority of the legislatures meet during the coming winter, most active co-operation will be required in order to have the Code adopted by a majority of the states in the Union during this season.

Says Oscar B. Biorge in "Logging" on seeing for the first time Hull-Rust & Mahoning pit:—

"On approaching the pit I was reminded of the story of how the minister and the cowboy were each impressed with the Grand Canon on seeing it for the first time. The divine gazed into the canon for some time and then gravely spoke, 'When one beholds such an astounding work of nature one is filled with the transcendent realization of the infinite power of the Almighty and further, of what infinitesimal consequence is man.'

The cowboy instantly on coming into view of the gorge exclaimed, 'Holy h—l, what a hole!' "



· FIELD NOTES ·

QUESTIONS pertaining to the operation, maintenance or repair of excavating machinery wil be answered through this column. Address, Field Note Department, Excavating Engineer, P. O. Box 607, Milwaukee, Wisconsin.

Do Not Use Water to Cool Frictions

It is not an uncommon practice for the operators of large shovels, dragline excavators and dredges, to pipe water to their frictions in order to keep them from burning and to prevent them from sticking. The general practice is to use large barrels with a small pipe line running directly to the housing. It has been suggested that this is not a very efficient method of attaining this end. When a housing is hot, the thin layer of water produced evaporates at once and it has a tendency to make the brake grip too suddenly, jar the whole machine and reduce the life of the hoisting rope, and do little towards accomplishing the desired result.

It has been found in a great many instances that graphite mixed with any good available oil such as cylinder oil and applied to the housing once a day through the opening in the top, will bring splendid results and without the trouble or any of the dissatisfactions caused by water. The effect of the graphite and oil is to allow the brake to take hold gradually and at the same time prevent overheating. Try it.

A Hint for Road Builders

Sink-holes, mud holes, bog and miry spots in low lying portions of country roads are often effectually and permanently drained by firing charges of dynamite in holes driven into the impervious stratum of soil, usually clay or hard-pan which forms the basin and prevents the water from running down into the earth. These charges should be fired fifteen or twenty feet apart each way, the depth depending upon the nature of the soil. Wet spots in roads have been permanently cured at very little expense by this method.

A Card Index Progress Record

We publish herewith a fac-simile of a progress record card which is used by the H. J. McNichols Company of Chicago in connection with their various contracts. At the end of each days work the timekeeper on the job enters the figures which indicate the progress of the work and the amount of material received, as well as the labor employed during the day. It will be noted furthermore, that under "Remarks" that not only is the summary of conditions given, but this space is used for requisition ing material required. This card enables the contractor to figure very closely each morning the cost of the work of the preceeding day. It also serves as an excellent progress record and is extremely simple in its operation, requiring the smallest amount of trouble to keep up.

On..... From..... To.....

Lin. Feet of Excav.	Lin. Feet of Invert Built	Lin. Feet of Arch Built	No. M. H. Built	No. C. B. Built	Lin. Feet of Back Filling	Lin Feet of Pipe Sewer	Approx. Amt. of Ex. ahead of brick work

MATERIAL RECEIVED

No. Bricks	No. Bbls. Cement	No. Yards Sand	No. Yards Stone	No. Feet Pipe Size	No. Feet Lumber Kind	All Other Material and Tools

Foreman	No. Masons	No. Tenders	No. Laborers	No. Teams	All Other Kinds of Labor

Remarks.....

.....

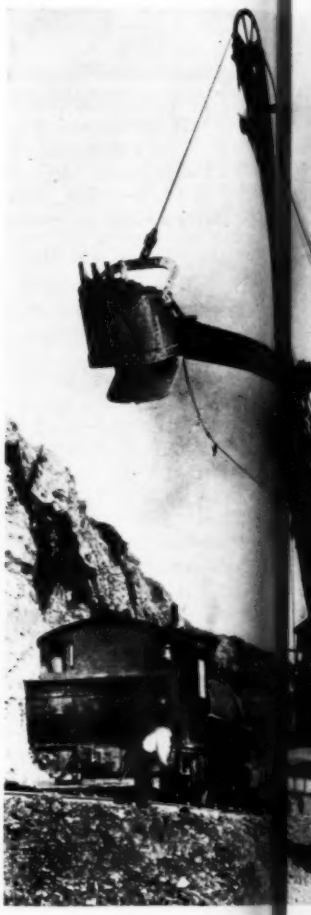
.....

Date..... 191.... Signed.....

Fac-Simile of a Progress Record Card Used by H. J. McNichols Company, Chicago

24451

The Adena Coal Company stripping the side of a hill on their property at Adena, Ohio with a 225-B Bucyrus shovel.

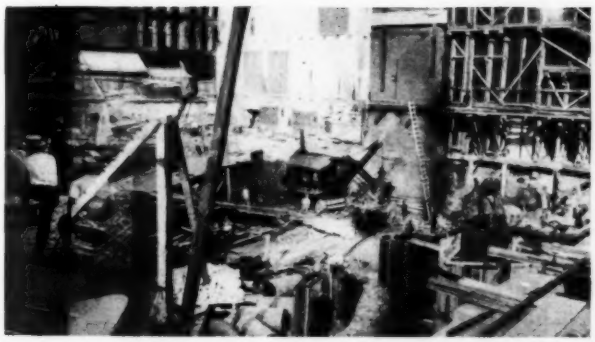


A striking view of open-cut coal mi[n]ing at [Har]lett, Company. The small shovel in [the] groun[d] one in the background has [a] T[he] with a 1½-yard dipper [and] cat 225-B of the [same] with a

One of the two 14-B Bucyrus shovels at work in the Lysvensky Mining District of Count P. P. Schouvaloff Successors, Ltd., in the Ural Mountains, Russia. Three more of these shovels have been ordered for these mines.

lett, Ohio by the Modern Coal Mining
round loads the coal which the big
The former is a 35-B Bucyrus
caterpillar and the latter a
ith a 6-yard dipper.

The Volpe Contracting Company's 14-B Bucyrus shovel working in conjunction with 5-ton Mack trucks in Brooklyn, N. Y. 75 trucks or between 350 and 400 cubic yards were averaged per day with a one mile haul, considerable time being lost waiting for trucks. This was a 60,000 yard basement excavation job for a manufacturing plant.



Fruin & Colin's 14-B Bucyrus digging a basement for a big office building in St. Louis.

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DEVICES YOU OUGHT · TO KNOW ABOUT ·

How a Motor Truck Enabled a Dolomite Company to Put its Product on the Market

The A. A. Haskins Dolomite Company of San Francisco, Cal. who own the largest mine of pure dolomite in the United States, aggregating over three million tons, are using a White Good Roads Truck and a 5-ton trailer to haul forty tons of dolomite every 24 hours from the mine to the nearest railroad siding a distance of 10½ miles. Exhaustive experiments made by this company prove that the truck and trailer is the only practical outfit that enables the mine owners to transport this quantity of mineral at the lowest possible cost.

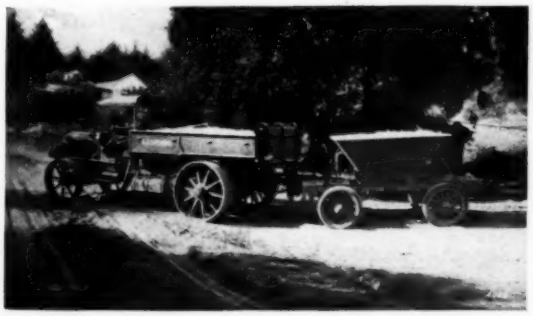
The road from the mine to the railroad is one of the worst roads for hauling to be found in any part of the country. It is full of chuck holes and 8 miles of every crooked mountain road is covered with a fine dust 6 to 8 inches deep. There are steep, sharp turns with grades from 8 to 10 per cent and 1½ miles long, making the task of hauling a very difficult one.

Before purchasing the Good Roads Truck and trailer the company experimented with mules and horses for hauling. One animal could deliver to the railroad one ton of dolomite every 24 hours. In order to deliver a minimum amount of 40 tons to fill a freight car, it was necessary to use five teams of 8 horses each, necessitating five drivers and the regular stable help. The cost of this method was prohibitive and soon abandoned. A rubber tired truck was then purchased, but the roads were so rough that the trucks could not operate efficiently.

With eastern steel and paper mills, builders' supply companies, plaster and chinaware concerns wiring for long term contracts and quantity shipments of this pure dolomite, the company was at a loss to solve the problem of getting the mineral to the railroad until they purchased a White Good Roads Truck and trailer. Now they can satisfactorily meet the market demands, the new equipment being able to make four trips in 24 hours from the mine to the railroad and deliver 40 tons of material. The drivers are not permitted to drive the truck over 5 miles an hour, tonnage and dependability being more essential than speed.

The cost of delivering 40 tons of dolomite with the truck and trailer is $28.71 while with horses and wagons the same tonnage incurred an expense of $58.21, resulting in a net daily saving to the owners of $29.50. The truck paid for itself in the first seven months in service.

There are two shifts of drivers and the truck uses 44 gallons of gasoline and 4 gallons of oil to haul 40 tons, registering a total mileage of 84 miles. In the day time 12 gallons of gasoline are consumed and at night 10 gallons for the round trip. The summer days are extremely hot and the nights cool.



White Truck and Troy Trailer Owned by A. A. Haskins Dolomite Co., of San Francisco

The mine is located in San Benito County and the truck and trailer are loaded direct from a chute into which the dolomite is dropped. Three minutes time is required for this operation. To reach the chute there is a grade of 10 percent with 12 inches of dust covering the road. The truck pulls the trailer up this grade and a sharp turn with a 40 percent curve is negotiated in order to get under the chute. A steep drop from the chute necessitates low gear work to get onto the road.

There are no brakes on the trailer and thus the responsibility of holding the 10 tons load on any part of the grades between the mine and the railroad falls on the truck. A short distance from the railroad the road leads for a quarter of a mile across the deep sand and gravel bed of the Salinas River, which is always dry in the summer. The road bed was packed with straw in order to give the truck better traction.

"I was walking along the road the other day and a bee lit on my arm."

"Did he hurt you when he lit?"

"Not when he lit; but, oh man! when he sat down."

—*Awgwan.*

Two Irishmen with a gun were hunting. The one carrying the gun saw a bird in a bush and carefully took aim.

"For the love of Heaven, Mike," shouted the other hunter, "don't shoot! The gun ain't loaded."

"I've got to," yelled Mike, "the bird won't wait."—*Exchange.*

Homebody: "So you think I get off easily when I tell you it costs me two thousand dollars a year for taxes?"

Rounder: "Oh, taxes! I thought you said taxis."

—*Punch.*

SHOTS FROM THE · FIRING LINE ·

Alaska

William C. Edes, chairman of the Alaskan Engineering Commission, reports that much progress has been made on the construction of the United States Railroad. Forty-nine miles of track has been laid from Anchorage, which, with the 71 miles of the old Alaskan Northern now in operation as far as Kern Creek, will make 130 miles of the 470 needed to connect Seward with Fairbanks. The tracks so far laid from Anchorage comprise about 6 miles southward toward Seward, 38 miles of main line northward to Fairbanks and 15 miles on the Matanuska branch and into the coal fields nearby. Rail will be laid in the near future as far as Potter Creek, 15 miles from Anchorage, from which point the rock work will be undertaken during the coming winter.

California

Notes from Sunny California

By G. H. Hutchinson

R. B. Merkle, contractor, San Francisco, has secured the first contract let by the Marin Municipal Water Company who recently placed bonds issue of $3,000,000 for improvement and extension of water system for Marin County. Mr. Merkle's contract consists of about 22,000 yards of rock and earth to be excavated and the building of a 7,000 feet road up to Pine Mountain. Contract was let for $8000. Engineer's estimate $7810. A Bucyrus 14-B revolving shovel is handling the work operated by F. B. Stowell.

C. L. Hyde Construction Co., San Diego, have just completed their work on the South Dyke of the Sweetwater Dam. Excavations approximate about 30,000 yards of decomposed granite and boulders and was exceedingly hard digging. A Bucyrus 18-B averaged for a period of three months, nine hour shifts, 500 one and a half yard wagons per day. The highest output during that period was 670 wagons. Phillip P. Tuckett was operator, E. H. Minor, fireman.

L. Beauman has recently been appointed assistant to Chief Engineer Goodrich of the Utah Copper Co., Salt Lake City, Utah and will have charge of enlarging their tailings pond, digging a drainage canal several miles long capable of carrying 150 second feet, and the changing of the San Pedro and Western Pacific main lines from their present locations to a mile north, a distance of ten miles.

Contract for the canal and changing location of the railroads has recently been awarded to the Utah Construction Co. of Ogden. We had the pleasure of meeting Mr. Beauman recently for the first time. When invited to be seated, he said, "He preferred to stand so that his shoes and the seat of his pants would have equal wear." If the gentleman's statements are true, he is an old timer in the business. His native state is Texas and claims the first time he was on earth, they were excavating the Brazos River. If he is able to come back a third time after they are through with him in Salt Lake, we would suggest a pedestal similar to Brigham Young's. He tells the story of a busy engineer that had the itch and a Waterbury. When he wasn't scratching he was winding his watch. Nature has been very kind to this gentleman, he looks as substantial as a 70-C. He had a narrow escape in Los Angeles; a moving picture manager insisted on him taking a part that he was large enough to fill. After some persuasion he got away. Right then was where he made a mistake, the salary perquisites and Los Angeles for a home were attractive. Opportunity knocks once at each mans door; some peoples twice.

We hope to have something interesting to report after he has made a stay of several months in Utah. His last position was division engineer of the Southern Pacific Lines at Stockton, Cal.

Will L. Clark, manager of the United Verde Copper Co since 1904, has resigned that position. He is succeeded by Robert E. Tally, who for the last eight years has been superintendent of mines for the United Verda company, and is now to have the title of assistant general manager. For the present he will continue also to act as superintendent of mines.

Joe Lacey has just returned from Salt Lake City where he has been running a Marion for Joe Mellen. He is still the "Smiling Joe" of old but big like a house. He has taken on weight from the ground up and looks all blown up like a poisoned pup.

D. S. Kilpatrick of Kilpatrick Bros., who are doing the double track work on the Union Pacific between Ogden and Evanston, was in Salt Lake recently and advises us the job is nearly completed and they expect to finish it before the end of the year.

D. S. Gerow has finished his Union Pacific work and is getting ready to ship his outfits, I understand, to Denver. If Gerow will come to San Francisco, we will show him several places where he can get U. P. money changed.

Our friend Billy Gallagher, who is employed by Lee Moor, has just sent us a bale of Villa money. Bill states that he got it out of a bank with a steam shovel. Some Mexican had cashed it. He cautioned us not to get busy trying to pass it. This will come in handy working it as a flash on the bell hops. Leave it to Bill to get the money. We hope when he comes to San Francisco he will have a goodly supply of cabaret money.

G. W. Hamilton was in Salt Lake a short time ago looking for another job and states they are about through with the U.P. work after a successful Summer. Hamilton, D. S. Kilpatrick and Tom Gibbons invited the writer to accompany them to church. As I had an appointment with a fat lady trying to sell her a set of caterpillars, I had to decline.

Mike Dooling of Dooling Bros. was a visitor in Salt Lake trying to hustle up men. He said they kept three or four men chasers busy. Everybody complains of a shortage of labor Dooling Bros. are getting pretty well along with their work and expect to finish before bad weather sets in.

The Utah Construction Company has just been awarded a contract from the Utah Copper Company for excavating 600,000 yards of material, which is all dragline work. It consists of digging a canal near Garfield, Utah, about six miles long, capable of carrying one hundred fifty second feet for the purpose of taking care of the overflow water from the Magma and Arthur Mills, also shifting the main line of the Western Pacific and San Pedro Railways about a mile and a half north. This work is being done for the purpose of enlarging tailings pond of the Utah Copper mills and which will give several thousand acres more room. At the present time they are dumping about 35,000 tons of tailings per day in their pond.

A contract for constructing highways in Avon has been awarded to Chadwick & Sykes, Crocker Building, San Francisco, at about $17,000.

George W. Corrigan has been promoted from roadmaster to division engineer of the Stockton division of the Southern Pacific System.

Canada

Montreal and Vicinity

By B. St. John

Whole farms have been acquired outright for a distance of seven miles from Chippewa Creek to near Queenston, in the purchase by the Ontario Hydro-Electric Commission of right of way for the canal which will be constructed to the proposed site of the mammoth power house, close to Queenston.

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The Commission found it almost as economical to purchase the whole or a large portion of the farms through which the survey of the canal runs as a narrow strip, and expects to be able to dispose of what is not required for canal purposes to manufacturers as sites for plants.

When the building of the canal is started next spring, a construction railway will be built on each side of it for its entire length, which will eventually provide inter-switching arrangements for freight with all the important railway lines in the vicinity of the work.

Word was received in Montreal on Saturday to the effect that the work of completing the Quebec & Saguenay Railway from Cape Tourment to Murray Bay, a distance of seventy-two miles, is being pushed ahead rapidly, some three hundred men being engaged along the right-of-way. A good part of the rails are on the spot, and the remainder can be easily delivered in the early spring, when grading is completed, and the laying of the steel begins. Rock work will be carried on during the winter months, and it is expected that the railway will be completed early in the summer.

The Cook Construction Company Limited are taking advantage of the fine weather we are having this Fall, and have all their equipment going full blast; a big estimate this month would help to keep them cheerful during the long winter ahead, when the work will be shut down.

The new Halifax Ocean Terminals have progressed to a point where vessels will soon unload there, in fact, one vessel has discharged a cargo of cement on the new dock.

It is reported that the Canadian Northern Tunnel Company will soon ask for tenders for the excavation for the new station at Montreal. I understand there is 185,000 cubic yards of earth and 80,000 cubic yards rock to be taken out. This material will be hauled through the new tunnel under Mt. Royal, to a fill about three miles from the station site.

Power development works have been commenced by M. J. O'Brien, of Renfrew, Ont., at Calabogie village, situated at the foot of Lake Calabogie, an expansion of the Madawaska River. It is his intention to build dams and erect a power-house for the generation of 5,000 horse-power hydro-electric current which will be transmitted either partly or wholly to Renfrew, a distance of 20 miles. A dam 28 feet in height will be built on the site of an old mill of the pioneers, and beside it will be the power-house. The total cost of the whole development will approximate half a million dollars. Mr. O'Brien, who is removing his head office from Montreal to Renfrew will establish additional industries there, and there are prospects of a big pulp mill on Lake Calabogie, where a large amount of pulp-wood is easily available.

The Atlas Construction Company have secured contract for construction of a large theatre to be erected here. There will be considerable excavation which may be sublet.

Jack Loney of Loney Bros., contractors on the St. John Valley Railway work, was in to see us. He reports good progress considering the shortage of labor. They will have enough work to keep them going until next fall.

Vancouver and Vicinity

By A. G. Brown

D. McNicoll, formerly vice-president and a director of the C. P. R., who owing to illness, spent the summer at his son's ranch, Penticton, B. C., has returned to Montreal where, it is said, he is to undergo special medical treatment.

Pending the completion of the Canadian Northern terminal at Vancouver the company is considering establishing a temporary passenger terminal in connection with the new freight sheds.

Charles F. Sprott, of Burnaby Lake, B. C., has been appointed a member of the North Fraser Harbor Commission to succeed Robert Abernethy, who has resigned.

D. D. Fraser, of Butte, Mont., has joined the engineering staff of the Highland Valley Mining and Development Co., at Ashcroft, B. C.

Geo. Kidd, general manager, British Columbia Electric Railway, returned to Vancouver recently after a three month's official trip to England.

C. H. Rust, city engineer, Victoria, B. C., recently addressed the Rotary Club of that city and described interesting features of the sewer and waterworks systems.

Raymond Scott is operating a 70-C Bucyrus for Kennedy & McDonald at Woodmans Point, New Brunswick.

Colorado

O. E. Donahue of Portland, is operating a 70-C Bucyrus steam shovel for the Portland Cement Company.

Connecticut

Al. Rivers who formerly ran an 18-B Bucyrus shovel for the Pierson Engineering Company is now operating an 18-B for the Union Pacific Company in Hartford. He expects to finish this job some time during the early part of December.

Cuba

George W. Williams is erecting an 88-C Bucyrus steam shovel the Camoa Quarry Company at Jamaca, Havana Province.

Florida

The Gulf Coast Railway which is building a line from Venice, Fla., south to McCall, 26 miles, has grading finished to a point near Manasota, a new development town. It is expected that all the work will be finished by April, 1917. E. B. Duncan, Venice, is the contractor.

Following are bids opened October 31, by Board fo Commissioners Drainage District. (F. C. Elliott, chief drainage engineer) for constructing a canal 19 miles long, requiring removal of about 1,600,000 cubic yard material; (a) 1,534,700 cubic yard earth excavation, (b) 45,200 cubic yard rock excavation, (c) 1,579,900 cubic yard excavation without classification: Johnson & Co., West Palm Beach, Florida (recommended for acceptance; total cost of excavation at contract price of lowest bid, $144,023), (a) 8½ cents, (b) 30 cents, (c) no bid; Bowers Southern Dredging Co., Galveston, Texas, (a) 9½ cents, (b) 25 cents, (c) 10 cnts; J. P. Middlemans, Tampa, (a) and (b) no bid, (c) 10 cents; J. B. McCrary, Atlanta, Ga., (a) 9½ cents, (b) 35 cents, (c) no bid.

Illinois

Chicago and Vicinity

By E. C. Hingston

A new name for a steam shovel salesman. We have heard salesman called, "Hot air merchants," "Bags of wind," and many other names, some of which would not look well in print, but there is a new one which came to our notice a few days ago.

A salesman sometimes spoken of as "The office boy," or "Big Liz," dropped into a town down in Ohio, together with a competitor, with a result that the sidewalk between the hotel in a certain office building and the halls of this building have well worn tracks, so that neither of them will need a guide to locate this particular office in the future.

The elevator boy in this particular building who, by the way, is a bright and very efficient elevator boy, in addition to being the building directory and information bureau, was taking Mr. H., the gentleman on whom these two order seekers were inflicting their attention, up to his office and in way of informing him of the happenings during his absence stated that the "Bucket man," "The big bucket man" had called to see him. One of Mr. H's assistants had another name for him, but we will refrain from saying what it was.

The other assistant must have thought the "big bucket man" was in great danger and tried to sell him an insurance policy, but without avail. We are at a loss to know why he was so persistant upon selling him an insurance policy, unless he thought that his competitor might inflict some damage to his person, as Fordy came home with all the bacon in sight.

Our good friend, Captain Weatherall of Sumpter, Ore. is leaving on November 20th for the happy hunting ground where he has an abundance of yellow metal, with an engineer to go over the property. We all wish Captain Weatherall the best of success in proving to this engineer that there is plenty of the yellow metal in the ground and all it needs is the proper machinery to get it out.

The prices now being obtained for coal has made quite a flurry in the strip coal business, and all the strip coal fields are being worked and new locations developed every day.

There is a good chance now for the steam shovel man, who has had some experience in this business, to study the matter and make himself capable of handling these propositions to the satisfaction of the operators, as there will be many new positions open for the right man. There is also planty of opportunities for the steam shovel man to improve himself by becoming efficient in handling these large coal stripping shovels.

The following contracts have been awarded for constructing various roads: Henry County, Section C, oiled earth, to Cameron, Joyce & Co., Keokuk, Ia., at $23,711.58; Macoupin County, Section G, oiled earth, to John Brogen, Eldred, Ill., at $7,227.21; Pulaski County, Section E, earth to D. E. Murray, Pana, at $3,284.21; Shelby County, Section F, earth, to D. E. Murray, Pana, at $3,326.68; Shelby County, Section G, earth, to D. E. Murray, Pana, at $3,831.86, and Shelby County, Section H, earth, to D. E. Murray, Pana, at $4,457. 80.

A contract for constructing 40 miles of ditches requiring 1,600,000 cubic yards of excavation near Quincy has been awarded to R. H. and G. A. McWilliams, 1111 McCormick building, Chicago, Ill., at $124,000.

The report of the Chicago, Burlington & Quincy for the year ended June 30, 1916, shows that the connection between Wendover, Wyo., and Guernsey has been completed. Work on the Chalco-Yutan cut-off is progressing and much of the grading has been completed and track laying in under way. This cut-off shortens the line between Omaha and Sioux City and it is expected that the new line will be ready for operation early in 1917. IOn the Beardstown and La Crosse divisions, 34 miles of double track was completed and an additional 51 miles is under construction. Action was taken by the city of Aurora, Ill., which compelled the company to elevate the tracks through that city. This necessitated the purchase of a large amount of property and the relocation of part of the line. The work has been started and the estimated cost is $3,250,000.

Indiana

E. T. King is erecting a 35-B and a 225-B Bucyrus revolving shovels for the Linton Fourth Vein Coal Company near Linton.

Iowa

Crawford county, with 350,000 cubic yards, will undoub tedly take the lead over all other Iowa counties in the amount of dirt handled in her road work during the 1916 season. Buena Vista and Hardin counties which have in progress enough to make up a grand total for the year of 200,000 cubic yards will probably be next in line after Crawford.

The tabulated statement in this connection shows that a total of 251,709 cubic yards distributed over 20.33 miles were contracted for this season. This is at an average of 12.381 cubic yards per mile. The average cost is twenty cents per cubic yard. The lowest price paid this season was 17 cents, the highest 23.

In addition to the work contracted this year, there has been or will be finished up this year enough to make up a grand total for the year approximating 350,000 cubic yards.

Crawford county contracts all its work. The county owns no road building machinery except a few road drags. It does not possess even a blade grader. It has no tractors, or elevating graders. It puts all the money available into road work on contracts let at competitive bidding.

A contract has been awarded by E. A. Schell, county auditor, Harlan, Ia. to Land Construction Co., Council Bluffs, at 7.2 cents per cubic yards for straightening 6 miles of Nishnabotna River, consisting of 500,000 cubic yards of excavation.

Kansas

Pittsburg and Vicinity

By W. S. Russell]

What with the cold weather and the car shortage the demand for coal caused the price to go skyhigh where it still remains notwithstanding a moderation in temperature during the past week. The car shortage has improved somewhat in the Kansas district and will continue to improve. Railroads are sending cars home as demanded by the Interstate Commerce Commission. We note from trade journals that on November 1st there was a shortage of 180,000 cars on American railroads as per an accounting at New York by the American Railway Association, which is the worst in 10 years. The situation in the middle west and east is worse than it was a month ago. New England is short on both bituminous and anthracite New York is receiving a limited amount of soft coal all the way from Illinois, poor as it is.

The coal trade in Ohio has become demoralized. Retail prices have advanced to $6.00 per ton for soft lump and $11.00 per ton for anthracite. Cleveland faces a coal famine. Industrial grades are selling at several times their normal value. An unparallelled shortage of cars, a breakdown in railroad organization is blamed for the crisis. Normally over 500 cars of steam coal come daily into Cleveland and now the receipts are less than 200 cars. Similar conditions exist at Toledo, Columbus, and Cincinnati. Mine operators report a shortage in shipments of from 50 down to 30 per cent of their requirements.

In Kentucky the best grades of lump coal bring $3.50 and $4.00 at the mines, with mine run at $3.60 and nut and slack at $3.00. In Alabama prices on steam coal are going up and sales are being made at $4.00 per ton. The car shortage runs about 50 per cent of the demand, which compels many of the mines to run half time only. It is understood that a number of large plants have been forced to suspend operations temporarily pending a replenishment of their fuel supply.

Prices of soft coal in Indiana and Illinois have doubled. Lump beinging $3.00 and $3.50, mine run $2.75 and screenings $2.50 per ton at the mines. The tremendous increase in demand by industrial and manufacturing plants accounts largely for this situation which intensified by the car shortage.

Prices of bituminous coal in the Kansas fields are as follows: Lump $3.00; Nut $2.75; Mine run $2.75; Mill run $1.85; Slack $1.65 per ton, f. o. b. railroad cars at the mines.

The dry weather this fall has been favorable for the coal stripping steam shovels and they are all working. Several are on double shift and more will follow as soon as the supply of railroad cars becomes better.

The main trouble with the railroads is the lack of sufficient motive power to handle the cars and keep them moving. The cars are idle half the time and stand after being loaded or unloaded, waiting transportation.

The railroad situation is becoming a serious problem. Nobody will invest money in railroads without an assurance of dividends. Their stocks should be cut down to represent the actual cash value, and tariff rates fixed to allow them a fair

margin of profit to give good service and pay reasonable interest and dividends.

The strike of coal miners in Oklahoma was settled on November 13th after lasting about two weeks.

The Ellsworth-Klaner Company finished overhauling their model 271 steam shovel at their Chicopee coal stripping plant about a month ago and are in full operation gain.

The Whitmer Contracting Company, under the superintendency of Charles Bugbee, are making a fine showing at their Frontenac coal stripping plant. Considering the nature of the overburden which contains considerable sand rock and hard shale. having a depth of about 30 feet. They are shipping about 8000 tons of coal per month.

The Fleming Coal Company of Kansas City are operating a 175-B Bucyrus revolving steam shovel, stripping a field of 130 acres near Skidmore about 2 miles below Scammon. Harry Jones is superintendent.

The Moka Coal Company of Pittsburg, operating a coal stripping plant a mile south of Mulberry, sold out about a month ago to the Sheridan Coal Company, who operates several deep shaft mines in the Pittsburg district. The equipment consisted of one 150-B and one 175-B Bucyrus steam shovels. Also an outfit of tram cars, locomotive, tram-track, tipple, loading tracks, pumps, pipe, engines, shops, tools, etc. We understand the new company has leased an additional piece of ground adjoining the present field and will extend operations when advisable. Edward Roberts is general superintendent.

The Southern Kansas Coal Company of Weir City, are operating a 95-ton Vulcan steam shovel, stripping a field about a mile south of Scammon. Henry Jenkins is superintendent in charge of field operations.

The Pierce Coal Company are running their model 251 Marion steam shovel north of Mulberry double shift. When coal is selling at $3.00 per ton it pays to work nights. The coal is lifted out of the pit in 4-ton cars by a revolving crane.

The Universal Brick and Tile Company of Oskaloosa, Missouri, have finished reconstructing their plant at a considerable outlay and are now turning out a first class building brick which meets with a ready sale. They have a rrmarkable piece of ground for supplying the material consisting of sandy clay, top soil, then from 8 to 12 feet of gray shale overlying a vein of soft coal 18 inches thick and under neath the coal a bed of fire clay from 8 to 10 feet thick, which makes a combination of great advantage. Mr. C. W. Reed is general manager.

We were very agreeably surprised to learn that our friend, J. H. Burnett, the well-known coal dealer was married last month and has moved to Hume, Missouri, to look after his interests in coal mining.

There were lively times in Pittsburg during election week week with night parades, music and horns tooting both before and after the fatal Tuesday, but it is all over nobody hurt and things going on as usual.

There are good opportunities for parties having means to engage in coal stripping in the Kansas field. Strip coal land can be bought or leased at reasonable prices and there is good money in the business. Further information will be furnished by addressing W. S. Russell, Stilwell Hotel, Pittsburg, Kansas.

The Bucyrus Company have a stock of repairs for their coal stripping steam shovels at the W. L. Sullivan Machinery Company store room, which is a great convenience to operators of Bucyrus steam shovels.

The W. L. Sullivan Machinery Company are located on 7th Street near Broadway where they carry a large stock of miners, mill, railroad and contractors' supplies. They are dealers in machinery, engines, boilers, pumps, motors, etc.. for either steam, gasoline or electric.

Also have repairs for Bucyrus steam shovels. Mr. Sullivan will give his personal attention to the wants of his customers.

The Hughes Stone Company, 208 East Third Street, Tulsa, Oklahoma, have for sale a model-36 revolving steam shovel one yard dipper, all in first class condition and working order having been used only 8 months in their quarry. Prices and terms reasonable

J. H. Fargo has resigned from the employ of Renhart & Donovan, contractors, of Oklahoma City, to become superintendent for Vandenberg & Pawley, general contractors, of Wichita, Kan.

Louisiana

George Stanbery is erecting a class-24 Bucyrus dragline excavator for Buchanan & Company at Shreveport.

William H. Vance, formerly engineer maintenance of way of the Louisiana & Arkansas Railway, has been made chief engineer.

The contract for constructing Wildwood Levee requiring 457,000 cubic yards work has been awarded to O. O. Ogden, 203 Roumain Building, Baton Rouge, La.

New Orleans and Vicinity

By The Byrons

Reports all along the Mississippi River are that all contracts are progressing rapidly and that all outfits are working day and night. They are experiencing very good weather.

The Doherty-Walsh Roller Co. announces that they have moved their general sales office at New Orleans from 1919 Carrollton Ave. to 51 Neron Place. Their increased business forced them to take larger quarters. They also advise that they are doing a large business and receiving many orders for spring delivery.

Major W. G. Caples Corps engineers, U. S. Mississippi River commission of the Fourth District has been transferred to San Antonio, Texas for military duty. The major leaves behind a large circle of friends who regret to learn of this change as he is thought well of by levee contractors and others who have had the pleasure of meeting him.

Major James Moore of Kansas City will succeed Major Caples as engineer in charge of Fourth District, Mississippi River improvement, and is expected to take charge of office about December 1st.

The Mississippi River Commission with Col. Townsend accompanied by several district engineers recently made an inspection trip from St. Louis to the Gulf.

The Mississippi River Commission have just authorized the purchase of two of the largest levee building machines of the dragline type ever built. They carry 160-foot booms and 5-yard buckets. One of these machines will be used on the Lower Tansas work in the Fourth District and the other in the Third District under Major Slattery. These machines will be furnished by the Bucyrus Co. of South Milwaukee, Wis. and were sold through their Southern office at New Orleans.

Mr. J. Whitt Gurley of Mobile was awarded about 4½ miles of sea-wall on the Gulf. Mr. Gurley will do some of the work with a hydraulic dredge.

It is reported that the Potts-Moore Gravel Co. of Waco Texas is opening up another large gravel pit near Waco. They are now operating a large pit at Waco.

Mr. F. C. Youmans of Houston Texas has just completed his contract for the disposal plant at Houston. Mr. Youmans was operating an 18-B Bucyrus revolving shovel on this work.

Anyone interested in strip coal land or having coal land to sell or lease will do well by addressing "The Byrons" at 1105 Hennen Building, New Orleans, La.

Buchanan & Co. report good progress on their twelve-mile bayou work near Shreveport, La. They are installing their second class-24 Bucyrus dragline on this work.

Mr. C. S. Miller, Memphis manager of the Western Wheeled Scraper Co. reports a good business, but also states he has the same disease of many other salesmen, "no deliveries."

Mr. D. B. Gore of D. B. Gore & Co. Inc. of Baton Rouge reports that his New River dredge work and his 17th Street Canal dragline work is progressing very nicely and expects to finish both pieces of work at a very early date. Mr. Gore is also opening up some large coal mines near Birmingham, Ala. and reports that good progress is being made and that he expects to be loading coal the first part of next year.

Your correspondent had the pleasure of calling on Mr. F. C. Crane the other day at Dallas. Mr. Crane is with Sterns & Crane who are Texas representatives of the Western Wheeled Scraper Co. Mr. Crane reports a very good ubsiness.

This office had the pleasure of a visit from E. S. Heyser of the W. E. Callahan Construction Co. Mr. Heyser takes care of the contracts in the south for his company and reports that they have plenty of work to do, especially in the State of Texas.

Anyone interested in a second hand 18-B Bucyrus shovel on traction wheels equipped either standard or for sewer digging, will do well by writing "The Byrons" at 1105 Hennen Building, New Orleans.

Mr. O. O. Ogden of Baton Rouge, La. has just been awarded a levee contract at Avondale, La. consisting of 450,000 yards of material. Mr. Ogden was formerly interested with the Hercules Co. Mr. Odgen had done a large amount of levee work along the Mississippi in the last few years. Mr. Ogden is operating a class-24 Bucyrus dragline and a small Monighan dragline. He will use his Bucyrus dragline on the Avondale work.

The Grasser Contracting Co. was awarded about 180,000 yards of levee work on the east bank about 30 miles north of New Orleans. This work was awarded by the State Board. The above company will use a dragline on this work.

Minnesota

J. H. Bitner, one of the Boomer shovel runners, left Calumet Minn. the early part of last month where he was employed by the A. Guthrie Company. A letter from Hot Springs, Arkansas, tells us that he is splashing water there and expects to keep on splashing for a couple of weeks. When he had had enough of this sort of sport he will go to Virginia where he will stay over Christmas. He confesses that while there his time will be divided between holding hands with a certain "lady friend" near Charlottsville and using his Winchester. Which will receive the preference will remain to be seen. However, the 1st of the year he tells us will find him ready for hard work again. Mr. Bitner says there isn't anything like the Hot Springs and he hopes to pay more visits there for it is the greatest thing thing in the world for anyone who is fond of splashing.

News Items from the Twin Cities

By Clapp-Norstrom & Riley,
1308-9 Pioneer Bldg., St. Paul

Owing to the heavy increase of business in the Chicago office of Clapp-Norstrom & Riley, Mr. Norstrom of the firm has engaged Mr. Newton Wilcoxon to manage the St. Paul office, and he will move to the Chicago office. Mr. Wilcoxon is one of the oldest equipment men in the business and has perhaps had more experience in the use and manufacture of contractors' equipment than any other man in the business—and enjoys an extensive personal acquaintance among all the contractors throughout the United States and Canada. He managed the Chicago office of the Kilbourn and Jacobs Mfg. Co. for fifteen years and was later vice-president and sales manager for the Oliver Co. at Knoxville. He was for five years president and manager of the Wilcoxon Construction Company who used Bucyrus draglines and shovels. Western dump cars, scrapers and graders, and Davenport locomotives. We take pleasure in introducing him to our patrons and know their requirements will be as well cared for as formerly—when a member of the firm was in charge.

Mr. E. A. Wickham writes us from Council Bluffs, Iowa, that he has purchased the Iowa & Omaha Short Line Ry. and will rehabilitate the line and make a real railroad of it. As Mr. Wickham is a thorough railroad builder as well as a financier, there is no doubt of his ability to do as he intends. He has not yet decided whether he will convert it into an electric line of continue the steam equipment—he is now consideraing both plans.

Mr. Chester P. Siems, president of the Siems-Carey Railway and Canal Co., has moved from St. Paul to New York and will be permanently in New York. Mr. Siems expressed his regrets at leaving St. Paul but said the one consoling feature, however, of the change, was that as long as he lived in Minnesota it was a republican state, but now it looked doubtful.

The directors of the St. Paul Union Depot Company unanimously agreed to build a depot in St. Paul to cost not more than $11,000,000. It was said the modification of the plans to meet the reduction in cost from $15,000,000 to $11,000,000 will in no way detract from the architectural merits of the depot proper. S. M. Felton, who was the principal objector to the depot plans, voted favorably at the conference.

The following is what the officials have decided to do:

Limited the cost of the improvement to $11,000,000 instead of $15,000,000 as originally planned.

Reached unanimous agreement on the reduced cost, S. M. Felton voting with the other eight directors.

Directed the attorney to have final draft of operating agreement, bond and mortgage ready for meeting November 22nd.

Directed chief engineer to modify terminal plans to bring them within the $11,000,000 cost.

Increased the engineering committee by making S. M. Felton a member.

Tentatively adopted operating agreement and bond and mortgage forms.

Obtained from Rock Island representatives pledge to recommand approval of depot plans to United States court.

Operating officials of the Milwaukee road in Minneapolis were notified that 100 miles of additional track has been turned over to electrical operating in the west, leaving the third unit of the Milwaukee's electrification plan still to be completed. The additional track added extends from Deer Lodge to Alberton, Montana, and brings up the total of electrified line to 336 miles.

Ed Peterson of Omaha was a caller here recently and while he would not state what he was doing up in this part of the country at the present time, we have a suspicion that owing to all the money he has cleaned up on his horse, Ben Earl, this season, he is here to purchase the state capitol of Minnesota.

UMI

J. H. Roberts of Roberts Bros. was a caller here and in fact came in with Peterson. Roberts advises that his Great Northern work up in Wildrose is progressing nicely and that we have him to thank for the splendid weather we are having, as it was specially made to order for his job.

Grant Smith & Co. Pioneer Building, St. Paul, Minn., have been awarded 35 miles of new line for the Northern Pacific from Laurel, Montana to Lake Basin. This work will require some heavy rock work and some team and shovel work. This work was sharply contended for by all the principal contractors of the Northwest, but Grant Smith & Co. wanted it just a little more than the other bidders and landed the contract.

The report of The Great Northern for the year ended June 30, 1916, shows that construction of an extension to the Stanley-Wildrose branch was commenced in June, 1916. This line will extend from Wildrose, N. D., in a westerly direction to Grenora, about 36 miles, and is expected to be finished in 1916. The work which was suspended on the lines of the Montana Eastern has been resumed; about 30 per cent of the grading for the line from Lambert, Mont., to Richey, about 25 miles, has been finished and it is expected that the line will be completed during 1916. Work will also be resumed on the line from Lewistown, Mont.. to Grassrange, and it is expected will be finished early in 1917. In May, 1916, work was started on the Great Falls & Teuton County Railway, constructing a line from Bynum, Mont. (the present terminus of the Great Northern branch from Power Mont.), northerly to Pendroy, 8.7 miles, and the line is expected to beready for operation in 1916. Work was recommenced upon the line of the Vancouver, Victoria & Eastern Railway Navigation Company between Sumas Landing and Kilgard, B. C., 9.37 miles, and is expected to be finished during 1916.

The report of The Northern Pacific for the year ended June 30, 1916, shows that in Minnesota the Cuyuna Northern is building a spur track about 4,100 feet long and two sidings will be completed this fall to provide facilities for handling ore from the Hillcrest Mine. A contract has been let for grading the Flathead branch between Dixon, Mont., and Polson, about 32.76 miles, and it is expected that this line will be completed in 1917, also another line from Billings nroth and west into the Lake basin country. In the state of Washington, an extension of the Sunnyside branch from Grandview to Gibbon, about 12.1 miles, has been authorized and the work is now under way; it is expected that the work will be completed in 1916. An extension of the Fort Simcoe branch from Harrah to White Swan, about 10.23 miles, has been authorized and work is under way; this si also expected to be finished in 1916. An extension of the Cowiche Branch, 1.5 miles, has been authorized and contract was let for the grading, but owing to right-of-way complications the work has been deferred for the season. To serve a large saw mill being constructed by the Snoqualmie Falls Lumber Company, a bridge and track about 2,500 feet long is being built at Snoqualmie Falls, and it is expected will be finished in 1916. Grade separation work at Spokane has been in progress during the entire year and will be completed before 1917 except the ballasting. Four bridges under construction east of Spokane under the yard, which are supplementary to the grade crossing proper, will not be finished until 1917.

Mississippi

The Indian Creek Drainage District, Sledge, Mississippi, has let contracts for the construction of 737,000 cubic yards of levee and 1,665,000 cubic yards of ditch to the National Contracting Company, of Alexandria, Minnesota, for about $235,000. Morgan Engineering Company of Memphis, Tennessee, are engineers for the District.

Missouri

St. Louis Items

By A. B. Koenig

M. C. Connor's & Co. 601 W. Madison Street, Chicago, Ill. expect to have some team work to let in Indiana shortly.

Murphy & Rogers have started on a new winters job on the Wabash R. R. in western Missouri.

J. J. Purcell, Annada, Mo. has a dragline and a new grader that he wants work for.

T. F. Stroud the famous Omaha manufacturer wants to be remembered to all of his friends. States that as soon as the wanderlust seizes him again he is going to try and rediscover our city. Hope it will be soon Stroud.

Mulvill Bros. of Alton, Ill. can use several small team outfits on the Electric Line and levee work near that point.

A. V. Fetter Co. have finished their Government contract near Grafton, Ill. and moved their big fleet on to a new job of riprap work near Hannibal, Mo.

The Fetter Co. at the rec nt Government letting were awarded the contract for the Government revetment and shore protection work on the Mississippi river between LaGrange, Mo. and Hamburg, Ill.

Richard Evans, 4322 West Pint Street, St. Louis, Mo. has two 70-ton Bucyrus shovels idle on the P. & E. R. R. near Paducah, Ky.

J. G. Dodd is in charge of the Northern Construction Co.'s work near Corning, Ark. Dodd says they are going to finish this job way ahead of contract time.

R. A. Sinclare of the E. I. DuPont DeNeMours Powder Co. left here for Southern Illinois to look after their mine business which Sinclare reports very good at the present time.

Roger Monohan of the Manigold Contrating Co. reports that they are finishing their sewer work and paving jobs in the city. Are in the market for more of this kind of work. 610 Navarre Building, St. Louis, Mo. will catch them.

P. J. Murphy, Moberly, Mo. has a small job of bridge filling on the Wabash R. R. to sublet. There is about 3000 yards in this job.

H. F. "Big" Riley of Clapp, Norstrum & Riley was with us a couple of days last week. Riley reports among his various sales a lot of dump cars to the Illinois Central R. R. Co. across the river. He also reports a big business for the year.

Harrington Bros. Delmar & Handley Road, St. Louis, Mo. have one of the best team outfits in this part of the country idel at the present time. No team job to large for the Harrington Boys.

There has been very little to report about contractors here during the past month. The majority of them staying close to home to vote for their favorite candidates.

A. B. Koenig and a party of friends left here on November 14th for a two weeks hunting and fishing trip on Black River south of Corning, Ark. Koenig says he is going to reduce 20 pounds on this trip before returning.

Keating Bros. have moved their outfit on to a piece of work near Auburn, Ill.

Kansas City and Vicinity

By M. T. Babb

A. A. Luck of the Luck Contracting Co. was awarded work by the Kaw Drainage Board last week. There is about 42000 yards in this contract. The bidding was very close; Wood, Bancroft and Doty were almost a tie with Mr. Luck.

Mr. W. S. Dickey, president of the Dickey Clay Co. was defeated for the office of U. S. Senator at the November election. However the race made by Mr. Dickey was a good one and his vote was one of which he need not be ashamed. Mr. Dickey was on the Republican ticket and the final count shows him to have run several thousand votes better than did Mr. Hughes.

Mr. Carl Miller from Kansas was in the other day. Mr. Miller has 50,000 yards of levee building to do and is at this time undecided as to whether to do the work himself or let it to contract.

G. R. Dowd, Perlee, Iowa writes that he has a 12-team outfit idle for which outfit he desires work for the winter. He prefers a contract in the south if possible.

F. M. Thompson will continue his Kansas contracts with a new Western grader and wagon outfit. This means the work will move rapidly from now on.

The Oklahoma Cement Co. has placed its order for a train of Western cars to be worked in stripping its quarry.

A. L. Cook of Ottawa, Kansas has been on the sick list for 10 days. His many friends will be glad to know, however, that he has fully recovered and is at his office once omre.

Rumors of new Sante Fe work in Texas, Kansas and Missouri will not down. It would not be surprising if some good contracts were let within the next 60 days on this road.

Work on the interurban from Lawrence to Topeka, Kans. will hardly be started this winter. However, it surely will be done in the spring. The road is now completed and cars are running from Kansas City to Lawrence.

Mr. John Murray announces the new firm of Eichenbery-Murray Scrap Iron & Metal Co. 1418-30 West 9th Street Kansas City, Mo. Contractors who have scrap to sell are invited to get in touch with this firm. Also they have yard room for the storage of contractors machinery and solicit the business of storing idle outfits.

Mr. S. D. Tripp was in the city recently for a few days. Mr. Tripp is still on the M. K. & T. doing bank widening. He states he will probably have work for all winter.

Tom Campbell has taken a nice piece of Missouri Pacific work in Kansas. We understand about 50,000 yards are involved.

Election has come and gone and no one seems very much elated or very much put out over the outcome. The contractors in this section were very evenly dividedon their choice for President. Very few seemed to care much one way or another.

New York

Otto W. Momson sails from New York for Chile on December 16th in order to erect and test a 103-C Bucyrus electric shovel for the Chile Exploration Company.

A. L. Rivers is operating an 18-B Bucyrus revolving shovel for the Hartford Sand & Gravel Company at Hartford, Conn. This shovel was purchased by this company from the Pierson Engineering & Construction Company of Hartford.

Joseph Marino is operating and L. Fellon is firing the Volpe Contracting Company's 14-B Bucyrus revolving shovel on a 5000 yard job in Brooklyn.

Edwin G. Foster, formerly assistant engineer for the Buffalo, Rochester & Pittsburgh Railway, has been made valuation engineer, with office at Rochester, N. Y.

North Carolina

E. B. Eades is craning a 70-C Bucyrus shovel for Rinehart & Dennis at Badin. Mr. Eades tells us that he has been in the steam shovel business for the past nine years during which time he has had considerable experience with various types of machines. He tells us that the shovel he is now running will come nearer to digging solid rock than any others he has ever seen.

Ohio

R. J. Doyle, steam shovel engineer, has completed the work at Canton, where he has been working for J. C. Carland, and has recently accepted a position with the Walsh Construction Co., in Cleveland.

The Walsh Contracting Co., 1312 Citizens Building, Cleveland, bid 26 cents per cubic yard by dragline method for excavation for elimination of 25 Nickel Plate R. R. grade crossings between Detroit Avenue and Fulton Road, about 750,000 cubic yards to be removed, about 250,000 yards to be carried to Walworth Run, less than half a mile, and remainder to railroads right-of-way east of Cuyahoga river, a distance of 3 miles. Using hydraulic and sluicing the 750,000 cubic yards; estimated cost was 35 cents per cubic yard. Total cost of work estimated at $2.150,000 to the Nickel Plate and $765,000 to the city. Work is to begin at once.

Pennsylvania

Around Philadelphia

By E. G. Lewis

The Pennsylvanla Railroad Lines East are contemplating asking bids on several small excavating jobs mostly betterment work.

The Lehigh & Wilkes Barre Coal Company and the Philadelphia Reading Coal Comgany have both recently installed small shovels for the handling of culm banks and stripping coal. The operators report that they are about twenty-five per cent behind in their deliveries.

Timothy Burke of Scranton reports all his steam shovel equipment in operation.

Jake Hunter, president of the Keystone Slag Company of Philadelphia is ready at any time to start an argument in favor of his Bucyrus 18-B. A daily average of four hundred, one and one half yard cars of slag excavated without the aid of blasting is going some.

The New Jersey Zinc Company have installed an 18-B Bucyrus in their lime stone quarry at North Allentown, Pa.

The second of the Philadelphia subway contracts is to be awarded soon. This will include excavating under the City Hall and beginning of the work, north on Broad Street. It is understood that contracts for the continuance of this work are to be awarded as soon as the engineers can prepare the plans.

The approaching winter seems to have effect on building operations in and around Philadelphia. Contracts have recently been awarded for several large industrial plants.

The lowest bid for dredging and rock excavation in Philadelph/a Harbor was submitted by the Great Lakes Dredge & Dry Dock Company, New York, N. Y., at 40 cents for about 520,000 cubic yards dredging, and at $8.50 for about 65,000 cubic yards rock removal.

A contract will be awarded to American Dredging Company, Philadelphia, for dredging in Delaware River, on Deep Water Point, New Castle and Reedy Island Lighthouse ranges. This will require Section "K," 2,553,000 cubic yards; Section "L," 2,020,000 cubic yards, and Section "M," 2,677,000 cubic yards.

A contract has been given to the Miller Construction Company, Lock Haven, Pa. by the Buffalo, Rochester & Pittsburgh for grading work on a one-mile branch line, now under construction south from Marion Center, Pa. The line is being built to develop bituminous coal properties in Indiana county, Pa.

Tennessee

Frank Wilkinson is erecting a class-14 Bucyrus dragline excavator for the National Phosphate Fertilizer Company at Centerville.

A contract has been awarded to R. C. Cheshire and associates, Clarksdale, Miss., at about $1,000,000 for 3,000,000 cubic yards of enlargement and new work covering practically the entire Yazoo and Mississippi Delta Levee Dist.

Utah

George P. Woodhall, civil and mining engineer for the Utah Copper Company, was killed October 30th at Bingham when a surveyor's tape he held came in contact with a high-tension wire.

The contract for constructing 43 miles of railroad from Wendover to Gold Hill, has been awarded to Utah Construction Company, Ogden, Utah.

Virginia

A contract has been given by the Holston River Lumber Company to the Vaughan Construction Company to build a 11-mile standard gage lumber railroad to the Clinch mountain district in Virginia. The work includes building a 200-foot steel bridge. E. M. Allen, president, Darlington, Md., and H. T. Ballah, chief engineer, Abingdon, Va.

Washington

The contract for dredging 580,000 cubic yards of material from Lake Washington Canal, Seattle has been awarded to Erickson Construction Company, at $110,780.

J. R. Sherman has resigned as assistant engineer, U. S. Reclamation Service at Meadow Creek, Wash., to go to South America. He will have charge of construction of a large tailings dam near Rancagua, Chile, for the Braden Copper Company.

Kittitas Reclamation District has granted an option on the $5,000,000 bond issue to Twohy Bros., Spokane, Wash., and Portland, Ore., calling for construction of entire canal project, consisting of about 90,000 acres in Kittitas Valley.

West Virginia

A contract has been awarded Vaughan Construction Company, Roanoke, Va., at about $12,000, for improving road between gap of Stony Ridge and Bluefield.

Wyoming

News from the North Platte Project

We learn that on October 28th Mr. and Mrs. Mengel lost their little son whose happy presence in the world has been mentioned in our columns more than once. The doctors say that his death was due to teeth that could not come through.

The loss of a little life such as this is one of the saddest things that can happen in this world and the sympathy which will be felt for those whom he has left can never be expressed as it is felt.

We are certain, however, that as years go by his sojourn pathetically short as it was, will have made life sweeter if sadder for them.

A letter from Mrs. Mengel tells us that Winston Bros. Company of Minneapolis have been awarded nineteen miles of work on this project. They will very likely have three camps in all.

Howard Mann has just returned from Minneapolis after spending two weeks vacation at home.

Mrs. Geo. Spray from Beaver Dam, Wisconsin, is spending the winter in camp.

W. O. Winston, Sr. has been here for a few days looking over the work in general.

The Hilton Construction Company are making wonderful progress on their contract. They are running three shifts.

Winston Bros. are expecting to move in to their new camps about the 1st of December. Their equipment of horses and wagons have been arriving and they have recently purchased a big motor truck. Their old contract is practically completed, but there is nineteen miles more to be finished on the new one.

H. Rowell, Harry Anderson and Lemie Allison are operating for McArthur Bros. who are working three shifts in very heavy cutting mostly rock work. They have a splendid camp along the Platte River.

PROSPECTIVE CONSTRUCTION

California

Col. T. H. Rees, U. S. Engineers, San Francisco, will let contract soon for dredging to cost about $150,000.

The New San Gabriel levee protection district Artesia (Levi Carse, Artesia, president) contemplates doing some extensive levee repair work in the near future. The work involves moving approximately 50,000 cubic yards of sand from the bed of the San Gabriel river in this locality (at this point the river bed is practically dry) and depositing this material in levees 4½ feet high on either side of the stream channel. This is emergency work and those desiring to bid upon it should communicate with President Carse at Aretesia. The general plan of the work and its location may be seen at the office of J. W. Reagan, conuty engineer of flood control, 348 Court House, Los Angeles.

The Supervisors of Stanislaus County, California, contemplate a $1,500,000 bond issue for the construction of a system of highways. The plan calls for the surfacing of approximately 126.1 miles of road, with a 1:2½:5 concrete base of a minimum thickness of 4 in., and a wearing surface to consist of a mixture of asphaltic oil and screenings. The oil is to be applied at the rate of approximately ½ gal. to the square yard of surface and enough screenings added to take up all surplus oil.

The 16-feet concrete roads are to have a width out to out of earth shoulders of 24 feet, the 12-feet concrete roads are to have a width out to out of earth shoulders of 20 feet with a suitable gutter on each side for drainage.

In a report to the County Supervisors E. H. Annear, County Surveyor, Modesto, Cal., estimates the cost of the work at $1,482,850.

J. H. Leverling has estimated that it will cost approximately $4,000,000 to reclaim the Tulare lake basin, comprising about 200,000 acres, and on behalf of the land owners of the district he will

soon present plans to the board of supervisors with a petition for permission to organize a district to carry on the work. According to his plans and estimate a canal 125 miles long surrounding the basin would be constructed at a cost of $1,408,000; a venting canal into the San Joaquin River would cost $506,900; cost of canal and reservoir sites would be $900,000; a pumping plant would cost $150,000, and cost of constructing irrigation ditches and cementing canals would be about $1,000,000.

The advisory board of engineers appointed by the directors of the Imperial Valley irrigation district, El Centro, to report on work necessary to secure an adequate supply of water during 1917 has submitted its report in which it recommends improvements and repairs that will cost approximately $750.000. The work recommended is embraced in the following items: (1) Extend canal up stream above Hanlon Heading about 1¼ miles and there control the new intake by a structure arranged to admit the river water over the top of the flash board gates. (2) Dredge canal near its head to dredger capacity, requiring one and perhaps suction dredges. (3) Remove trestle 3½ miles below Hanlon Headgate. (4) Shorten Alamo River canal by eliminating bends. (5) Improve Alamo River canal by lessening its width where bank erosion has occured and channel has become shallow. (6) Make repairs at Hanlon Headgate. (7) Connect old Alamo River canal with new Alamo River canal, if possible. (8) Extend Cerro Prieto canal to connect with Alamo River canal at Cudahy check, if a more complete study of conditions show this to be feasible. C. R. Rockwood, El Centro, is chief engineer for the irrigation district.

The Panoche Valley Railroad Co. of Los Angeles, contemplates the construction of 52 miles of road extending between Los Palos, Merced County, to the Ashurst ranch in the Panoche Valley.

Bids will soon be asked by the Modesto Irrigation District for widening main canal, estimated cost $254,000.

Canada

It is reported that the Canadian Northern Tunnel Company will soon ask for tenders for the excavation for the new station at Montreal. It is said that the excavation will amount to 185,000 cubic yards of earth and 80,000 cubic yards of rock which material will be hauled to a fill about three miles from the station site.

Foreign

Brazil—The President of Brazil, by decree No. 12185, of August 30, 1916 has granted a concession to Alberto Alvares de Azevado de Castro for the construction and operation of a railway from Cuyaba, the capital of the State of Matto Grosso, through the town of Sant' Anna, on the Paranahyba River, to connect with the Araraquara Railway at a place called Jangada, or at Sao Jose do Rio Preto. This total extension will be about 1,000 kilometers (20 miles) in length, and will furnish direct railway communication between the city of Cuyaba and the ports of Rio and Santos.

According to the concession, the Government cedes such lands belonging to the Union as are indispensable for the construction of the road and its dependencies, and grants the right of expropriation of those lands of private ownership necessary for the roadbed, stations, warehouses, etc. It also grants to the concessionaire the use of waterfalls and watercourses for the production of electric power for traction and other services of the railway in case the road be electrified. During the period of the concession (60 years) the Government will not authorize the construction of any other railway within a zone of 20 kilometers (12 miles) on each side of the center of the roadbed, but will permit the laying of branch lines for private use.

Plans for the first section, 100 kilometers (62 miles), must be submitted to the Government before June 30, 1919, and construction work must be begun within one year from the date of approval of these plans by the Government. Construction must be carried on at the rate of 50 kilometers (31 miles) per year. The concession calls for a single line of meter (3.28-foot) gauge.

Central America—The International Railways of Central America has projected a line to run southeasterly from Santa Maria to Santa Ana in Salvador. It is stated that when this and other lines in Central America, projected or under construction, are completed, a direct through route will be afforded between Vera Cruz, Mexico and Panama and Colon, extending along the western portion of Central America through the five Republics Guatemala, Salvador, Honduras, Nicaragua, and Costa Rica.

Columbia—The firm of Pedro A. Lopez & Co., of Bogota, has made a contract with the Department of Public Works of the Colombian Governement for the extension of the Ferrocarril del Noroeste (Northwestern Railroad) from Nemocon to Saboya, a distance of some 75 kilometers (47 miles), with an option on a contract to continue the construction on to San Gil, in the Department of Santander, about 140 kilometers farther. The contract has not yet been finally approved by Congress and the President. The Ferrocarril del Noroeste at present extends north from Bogota a little over 50 kilometers to Nemocon. The projected extension will carry the line well to the north into the Department of Santander and will be a great step toward the completion of the long-projected route from Bogota through Bucaramanga and on to the Magdalena River at Puerto Wilches, a route which will birng Bogota several days nearer to the coast.

The contractors are bound in the sum of $100,000 for due compliance with their obligations, and provision is made for a Government subvention of $10,000 for each kilometer (0.62 mile) constructed. In addition to this payment the Government is to turn over to the concessionares that portion of the railroad already built, lying between Zipaquira and Nemocon, which is valued in the contract at $400,000. At the expiration of the contract (the term of which is not known here, but which is probably 50 years) the road built under the contract and the piece between Zipaquira and Nemocon become the property of the Government.

Russia—The British acting vice consul at Rostof-on-Don reports that, according to the local press of September 13, the project for the construction and equipment of a Volga-Don canal, as designed by the Russian minister of ways of communications, has been approved by the Government. A party of engineers has been appointed to carry out detailed technical surveys and to consider other questions connected with the execution of this large enterprise.

Idaho

It is reported that the Chicago, Milwaukee & St, Paul Ry. Co. (C. F. Loweth, chief engineer, Railway Exchange Building, Chicago) is having surveys made for constructing a railroad into great white belt north of Orofino.

Illinois

Ben B. Boynton, attorney, Kewanee & Eastern Railway Company, Springfield, Ill., will furnish further information regarding construction of a railroad 120 miles long.

Iowa

The Perry Pike connecting the Lincoln Highway and the River-to-River road, is to be gravelled the entire distance if the plans of the Bureau of Commerce of Perry and the farmers living along the road are carried out. The road will run from Ogden to Guthrie Center, through Perry and Panora.

Massachusetts

The contract for widening the cut leading through South Boston for four tracks, lengthening 11 bridges and building a few retaining walls will be let soon by New York, New Haven & Hartford Railroad Company, 470 South Station, Boston, Mass. The cost will be about $800,000.

New York

Bids for dredging and rock removal in Port Chester Harbor will be received until December 8th at United States Engineers Office, 710 Army Building, 38 Whitehall Street.

Oregon

An election will be held November 11th in Crook Co. for $1,100,000 bonds for irrigation of about 23,000 acres. R. W. Rea, project engineer, Prineville.

Pennsylvania

It is being planned by the Pennsylvania Railroad, A. C. Shand, chief engineer, Broad Street Station, Philadelphia, to double-track the line from Reading to Pottsville, distance about 35 miles.

Improvements authorized by the Pennsylvania R. R. Co. (A. C. Shand, chief engineer, Broad Street Station, Philadelphia), at West Morrisville Yard, New York Division, consist of constructing an eastbound receiving and westbound departure yard, and an eastbound and westbound main track. The work involves about 400,000 cubic yards grading, 3000 cubic yards concrete masonry and about 2500 square yards macadam paving.

Surveys are being made by Schuylkill Railway Company, W. S. Leib, Pottsville, general manager, for a line from Mahanoy City to Tamaqua, distance about 14 miles.

Texas

Plans have been approved by Arthur A. Stiles, state reclamation engineer., Austin, for constructing the following levees:

Ellis Co.—4 levee, 5½ miles long, 9 feet high, to reclaim about 600 acres.

Henderson Co.—No. 1, 7.2 miles long, 15 feet high, to reclaim 5306 acres.

Collin Co.—No. 1, 9½ miles long, 10 feet high, to reclaim 3500 acres.

Dallas Co.—No. 1, 9.3 miles long, 10 feet high, to reclaim 2300 acres.

Red River Co.—No. 1, 6 miles long 9 feet high, to reclaim 3500 acres.

Falls Co.—Several private levee projects along Brazos River contemplated.

It is being planned by the Houston, Richmond & Western Traction Company, W. A. Reinhardt, Houston, Texas, general manager, to construct line from Houston to San Antonio, distance about 190 miles.

Virginia

Norfolk, Washington & Yorktown R. R. Co. are reported as considering the construction of a line from Hampton Roads via Yorktown, to connect with the Richmond, Fredericksburg & Potomac Ry., distance about 85 miles. H. Wolcott, Norfolk, may be able to give information.

TRADE NOTES

The third annual session of the Northwestern Road Congress will be held in Chicago on December 6th and 7th. At this Congress the State Division and County Road Engineers and State, County and Township officials of the States of Indiana, Illinois, Iowa, Wisconsin, Minnesota and other central western states will gather.

The Troy Wagon Works Co. through their special representative, Mr. Ike S. Byrum, has just established a connection with Mr. R. P. Carroll, 1833 Twenty-fourth Syreet, Cleveland, Ohio. Mr. Carroll will act as their local district manager and will handle their entire line of Motor Truck Trailers, ranging in capacities from 1½ to 5 tons.

Mr. Carroll will succeed G. R. Pennington & Co., who have been their representatives in that city for the past two years.

The Hayden-Corbett Chain Co. continue to report a large volume of business and they are urging all customers to place their orders as far in advance as possible.

The White Company report the following recent orders for White Trucks. This list does not include single orders from new customers.

Two White 5-ton power dumping trucks to L. J. Nadler, Contractor, Vandergrift, Pa.

Two 1 1-2-ton White trucks to H. M. Byllesby & Company, Ehgineers & Contractors, Chicago, Ill.

Seven 5-ton power dumping trucks and three 5-ton trucks to Beam-Fletcher Corporation, Contractors, Philadelphia, Pa

One White 5-ton truck to J. C. Anderson, hauling contractor, McKittrick, Cal. making a total of two White trucks owned by this contractor.

One 1 1-2-ton White truck to J. O'Shea, contractor, San Francisco, Cal. making a total of three White trucks owned by this contractor.

One White 5-ton power dumping truck to the Highway Department of Fayette County, Lexington, Ky., making a total of four White trucks owned by this county.

One White 5-ton power dumping truck to Corrick Brothers, contractors, Detroit, Michigan, making a total of two White trucks owned by this company.

One White 5-ton power dumping truck to the Highway Department of Lenoir County Kinston, N. C. making a total of two White trucks owned by this county.

One White Good Roads Truck to the Highway Department of Elmore County, Wetumpka, Ala., making a total of two White trucks owned by this county.

One White Good Roads Truck to the Highway Department of Madison County, Huntsville, Ala., making a total of two White trucks owned by this county.

Reservations of exhibition space at the Eighth National Good Roads Show, to be held at Boston, Mass., February 5 to 9, 1917, under the auspices of the American Road Builders' Association, predicate the most important exhibition in the history of the organization from the stands point of educational value. The show will be held in Mechanics Building on Huntington, Avenue, which is admirably located and equipped for the purpose. The Building contains a very large amount of floor space, ample for practically any number of exhibits and adaptable to exhibits of any site.

The Good Roads Show will be held in conjunction with the Fourteenth Annual Convention of the American Road Builders Association, the program for which is now in course of preparation. Many of the foremost specialists in highway work and bridge building have already signified their intention of being present and participating in the preceeding.

Coming as it does, just prior to the opening of the new season's activities, the convention and show will afford road and street officials, engineers and contractors an excellent opportunity to familiarize themselves with the latest developments in road building machinery and materials and the most modern practice in highway work as followed by the loading authorities in this field.

REVIEW OF BOOKS and CATALOGS

We shall be glad to review in this column such books and catalogs as are sent to us. Books reviewed in these columns will be supplied by The Excavating Engineer Publishing Company at the price named.

DOMESTIC GAS-ENGINE-DRIVEN CONTRACTORS MACHINERY:—Bulletin No. 16-C, 6 by 9, 28 pages. Complete descriptions, specifications, illustrations and sketches of various types of hoists, diaphragm and centrifugal pumps, force pumps, etc. manufactured by this company.

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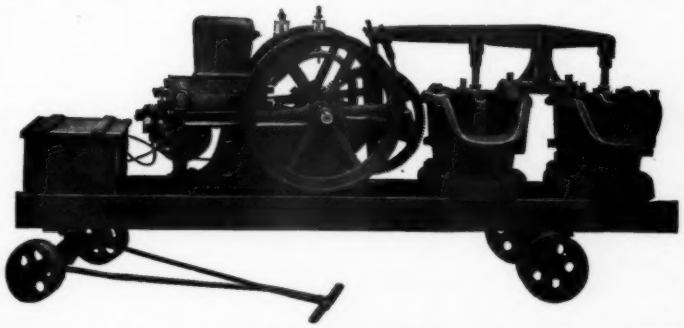

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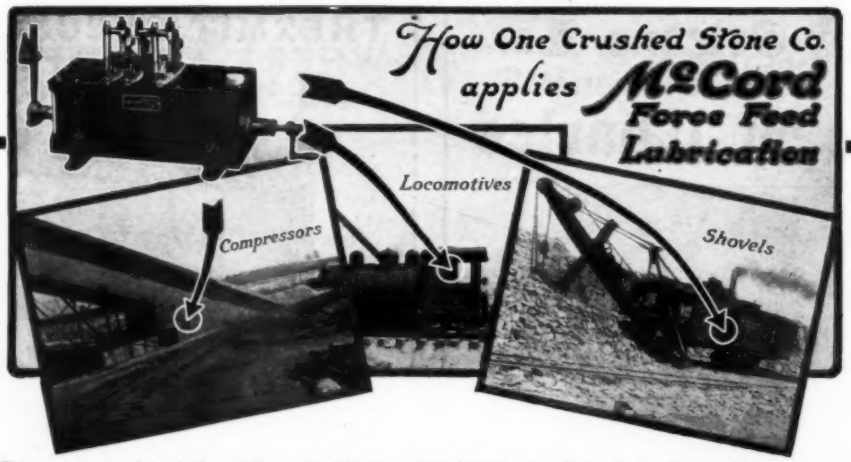

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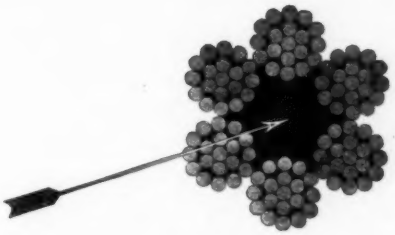

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75 Tons	80 lb.	600 Tons	35 lb.
600 "	68 lb.	350 "	30 lb.
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650 "	58 lb.	500 "	20 lb.
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1200 "	52 lb.	50 "	Girder Rails
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Westinghouse

Cutting Costs on a 45-Mile Canal

This 1,500,000 cubic yard ditch job on the Sun River Irrigation Project, Montana, was cleaned up in two seasons with two Westinghouse-driven Bucyrus dragline scrapers. Some interesting cost figures are available.

Electric drive was determined upon on account of the high cost of coal.

The larger machine is a Bucyrus class 24 with 100-ft. boom and 3½ yard bucket. The other is a class 20 Bucyrus with 85-ft. boom and a 2½ yard bucket.

Machines were hauled to the job knocked-down and were erected in the field.

Costs

Here's what each machine accomplished in cost-cutting in the three classifications of material handled:

TABLE 1—Excavation Costs in Cents Per Yard With Class 24 Electric Dragline Valued at $36,326.63.

Item	Class 1, 333,689 cu. yd.	Class 2, 23,319 cu. yd.	Class 3, 39,045 cu. d.
Interest on investment	0.81c	1.21c	2.25c
Preparatory expense	1.33	1.99	3.73
Plant depreciation	3.63	5.41	10.12
Executive	0.89	1.24	3.09
Labor	5.98	7.85	21.03
Electric power	0.73	1.03	1.82
Supplies	1.13	1.67	6.72
Miscellaneous	0.16	0.15	0.29
Total	14.66c	20.55c	49.05c

Table 2—Excavation Costs in Cents Per Yard With Class 20 Electric Dragline Valued at $20,957.13.

Item	Class 1, 410,747 cu. yd.	Class 2, 4,180 cu. yd.	Class 3, 9,546 cu. yd.
Interest on investment	0.44c	0.76c	1.61c
Preparatory expense	1.12	1.20	2.52
Plant depreciation	1.86	3.22	6.79
Executive	0.71	1.31	3.14
Labor	3.70	8.22	15.77
Electric power	0.78	1.78	2.80
Supplies	1.29	1.53	7.50
Total	9.90c	18.02c	40.13c

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To contractors who are confronting fuel problems, Westingouse offers the co-operation of its engineers.

We will work with your engineers or superintendents in the design of an electrically-driven plant.

This consulting engineering and designing work is a part of Westinghouse Service to the Contractor and is rendered without cost. If you are interested in it address our home office.

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One of Butler Brothers 225-B Bucyrus revolving shovels stripping an iron mine at Nashwauk, Minnesota. This is the first big revolving shovel to be used on the iron range. It proved so successful that a duplicate was purchased for stripping an iron mine at Wakefield, Michigan.

BUCYRUS REVOLVING SHOVELS

have demonstrated their ability under suitable conditions to uncover iron deposits more economically than can be done by any other method heretofore devised. Here it is not necessary to lay tracks in the pit and to go to the expense of frequent shifting of this track, as the shovel can easily dig a 50-foot cut and load cars on the original ground level. The transportation problem is thus greatly simplified as the loading track is much more permanent and there are no grades out of the pit to be considered. Furthermore, when the overburden is too soft to support standard shovel equipment, this type of machine can operate successfully as it works on the ore. Under conditions where the ore body is thin and the overburden too thick to warrant development with ordinary equipment, this type of shovel can operate profitably.

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